

Life in the Slow Lane: Conversion Technologies at a Standstill in California

Jim Lane

By Jim Stewart, Chairman, *BioEnergy Producers Association*

The momentum leading to the introduction of new technologies for alternative energy production has become increasingly evident during 2014. The year has brought a steady stream of announcements from the industry regarding equity infusions, strategic alliances and commercial demonstration projects. However, as far as the use of conversion technologies for the management of post-recycled municipal solid waste (“MSW”) is concerned, the State of California seems disinterested in this immense potential for economic development and an improved environment.



For more than a decade, California’s legislative bureaucracy, in league with elements of the environmental movement, has resisted all attempts to create a responsible statutory and regulatory environment that encourages the introduction of conversion technologies (“CTs”), which it defines as “technologies that convert unwanted organic materials into high-value products such as energy, alternative fuels, solvents, and other products.” Without such assurances, conversion technology providers have been unwilling to risk the time and capital necessary to permit and operate these projects in the state.

Meanwhile, throughout this time, state government has focused on improving the regulatory environment for other organic waste treatment processes that, in total, cannot address the state’s entire carbon-based waste stream.

Unleveling the playing field

For example, through regulatory decision-making alone, the state classified anaerobic digestion as composting, and as recycling rather than disposal, exempting these technologies from having to follow the same repressive permitting pathway that is required of other CTs, and enabling them to receive landfill diversion credit and to qualify the power they produce for the Renewable Portfolio Standard (“RPS”).

In 2012, not including exports by rail or truck to Canada or Mexico, the state, without any regulatory oversight of end use, allowed nearly 20 million tons of recyclable materials, valued at more than \$8 billion, to be exported to China, Taiwan, Korea and other destinations. By weight, this represented 28% of all seaborne exports from the state, and more than half of these materials were carbon-based. Although their destinations, end uses and greenhouse gas reduction benefits are never documented, as is required for recyclables processed within the state, these materials obtain credit as recycling the moment they leave the docks.

In contrast, last year, the legislature passed AB 1126, which it had amended to include conversion technologies under feedstock volume and content limitations that had been drafted to regulate the incineration of MSW in cement kilns. Language was added stating that what it calls “engineered municipal solid waste conversion” does not qualify as recycling, codifying in statute a major obstacle to the use of solid wastes as feedstocks for biofuels production—that MSW residuals, when used to produce biofuels, biochemicals or other products, count as disposal, rather than

recycling. The bill, whose restrictions on feedstock content place additional burdens on materials recovery facilities in preparing post-recycled MSW for processing by CTs, moved through the legislature virtually without opposition and was immediately signed by the governor.

Meanwhile, the legislature has refused to remove from statute a scientifically inaccurate definition of gasification that requires zero emissions from the entire biorefining process, a physical impossibility and a standard that would shut down every power plant and petroleum refinery in the state, not to mention any recycling facilities.

Why are clean fuels equated with incineration?

Today, other than gasification, all conversion technologies, including low temperature, acid or enzymatic, biochemical or mechanical processes, are categorized as “transformation,” equating them with incineration and subjecting them a more rigorous, time-consuming and uncertain permitting pathway than is required to site a major solid waste landfill.

In 2012, the renewable natural gas industry successfully sponsored AB 1900 and AB 2196, which established specific rules for qualifying biogas and biomethane under California’s RPS and defined standards for testing treated biogas so that it could be transported through the state’s natural gas pipelines, enhancing the market for biogas captured from landfills and sewage treatment plants, a major step forward in dealing with organic wastes after they have decomposed in landfills.

In 2011, California’s Legislature enacted AB 341, which established a policy goal calling for the state to source reduce, recycle or compost 75% of its solid waste by 2020, not mentioning that CTs could play a role in helping to achieve this goal, an oversight that appears to have been intentional.

It is interesting that the California Air Resources Board once stated that 24 CT facilities would be needed in the state to meet its goals for emissions reduction under the Low Carbon Fuels Standard. There has been no coordinated statewide policy to assist in meeting this goal. It has literally been forgotten.

Waste streams, a growing problem

According to a March 2014 report from the Natural Resources Defense Council, the state’s waste stream is projected to grow by almost ten percent, from about 72.8 million tons in 2010 to almost 80 million tons in 2020. This means that, even if the state could reach its 75% recycling goal, it would still be landfilling 20 million tons of post-recycled materials every year, more than half of which hold potential as carbon-based feedstocks for the production of biofuels, biochemicals and other biobased products.

Further, plasma gasification technologies now exist that can turn the inorganic fraction of landfilled materials into a slag that can be converted into high value products.

CalRecycle estimates that, in 2020, absent any changes in current policy, more than half of California’s waste stream, approximately 43 million tons, will still be managed through traditional disposal (i.e., landfilling) or other disposal-related activities. This means that, by 2020, in order to reach its 75% recycling goal, the state annually will need to recover for productive use an additional 23 million tons of material per year.

The markets for organic fertilizer and compost do not exist to meet this goal.

The Big Slow

In March of this year, CalRecycle finally acknowledged the immensity of this task, declaring that, “As part of reaching the 75% recycling goal through the recovery of more recyclables from the waste stream, and ensuring that 100% of material generated in California goes to its highest and best use, new policy approaches are needed to develop a pathway for the recovery of energy, fuels and chemicals from solid waste residuals that cannot be recycled.” In

announcing its “first workshop in a series in response to longstanding concerns regarding the multiple barriers to siting waste to energy facilities,” it promised that its staff would “introduce a policy approach that supports the recovery of energy, fuels and chemicals from solid waste residuals that cannot be recycled.”

However, one week before the scheduled April 29th meeting, CalRecycle’s Brown-appointed leadership cancelled the workshop to “allow time for stakeholder review of workshop materials.” Now, four months later, no such materials have been provided, no date for the first of these workshops has been set and there are concerns that the issue of the “highest and best use” for California’s municipal waste stream will go unaddressed for another year.

Certainly this has not been for lack of interest. As one example, Los Angeles County has been a leading advocate of conversion technologies for more than 20 years. Together with its Solid Waste Management Committee/Integrated Waste Management Task Force, comprised of representatives from local government, the solid waste management and recycling industry, the general public, business and the environmental movement, the County has sponsored outreach programs, conducted feasibility studies, pursued demonstration projects and sponsored corrective legislation.

In 2010, it conducted a Preliminary Siting Assessment for conversion technologies, and received offers of 18 sites in Los Angeles County alone, including acreage adjacent to landfills, materials recovery facilities and transfer stations, and other locations. Of these, only one of these projects has gone into construction, and the company, CR&R, a waste hauler, ultimately chose to install an anaerobic digestion facility.

Statewide, non-thermal anaerobic digestion, composting and wastewater treatment facilities are essentially the only organic waste treatment projects that are moving forward, and that is because state government has fostered a regulatory environment that favors their use. It would be a miracle if, over the next six years, the state could achieve a 75% recycling goal that relies upon these technologies alone.

Inaction = landfill

Even if corrective legislation could be passed in the new 2015 legislature, it would still be January 2016, before such legislation could take effect. Allowing time for environmental impact studies, permitting and construction, it could well be 2020 before the first commercial biorefinery addressing alternatives to landfilling could be operating in the state.

During that time, another 125 million tons or more of waste will be placed in California’s landfills, of which, historically, about 80% has been carbon-based.

Theoretically, as feedstocks for biofuels production, those 125 million tons of landfilled waste might have supported the production of at least five billion gallons of motor fuel.

So much for helping to meet the state’s new recycling goal.

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